WHAT IS CLAIMED IS:

1. A crimp state estimation apparatus for estimating a crimp state of a crimp contact terminal when the crimp contact terminal comprising a bottom wall for positioning a core wire of an electric wire and a pair of crimp pieces upright from opposite margins of the bottom wall and the core wire are held between an anvil and a crimper and are crimped, the crimp state estimation apparatus comprising:

an information input section for inputting information on the crimp contact terminal, the electric wire, the anvil, and the crimper and an input compression ratio of the core wire; and

an estimation unit for calculating a total length of the bottom wall and the pair of crimp pieces after crimp in a cross section orthogonal to the core wire based on the information and the input compression ratio and estimating a cross-sectional shape of the bottom wall and the pair of crimp pieces after crimp based on the total length.

2. The crimp state estimation apparatus according to claim 1 further comprising:

a calculation unit for calculating a calculated compression ratio of the core wire based on the information; and

a crimp height calculation unit for finding spacing

between the anvil and the crimper applied when a difference between the input compression ratio and the calculated compression ratio falls below a predetermined value.

3. The crimp state estimation apparatus according to claim 2, wherein

the calculation unit calculates a total cross-sectional area of the core wire, the bottom wall, and the pair of crimp pieces after crimp;

calculates a cross-sectional area of the crimp contact terminal after crimp;

calculates a cross-sectional area of the core wire after crimp based on the total cross-sectional area and the cross-sectional area of the crimp contact terminal; and

calculates the calculated compression ratio of the core wire based on the cross-sectional area of the core wire and a cross-sectional area of the core wire before crimp input to the information input section.

4. A quality determination apparatus for determining whether a crimp state of a crimp contact terminal is good or bad when the crimp contact terminal comprising a bottom wall for positioning a core wire of an electric wire and a pair of crimp pieces upright from opposite margins of the bottom wall and a core wire of an electric wire are held between an anvil

and a crimper and are crimped, the quality determination apparatus comprising:

an information input section for inputting information on the crimp contact terminal, the electric wire, the anvil, and the crimper and an input compression ratio of the core wire of the electric wire;

a calculation unit for calculating a calculated compression ratio of the core wire based on the information;

an estimation unit for calculating a total length of the bottom wall and the pair of crimp pieces after crimp in a cross section orthogonal to the core wire based on the input compression ratio and estimating a cross-sectional shape of the bottom wall and the pair of crimp pieces after crimp based on the total length;

a crimp height calculation unit for finding spacing between the anvil and the crimper applied when a difference between the input compression ratio and the calculated compression ratio of the core wire of the electric wire falls below a predetermined value; and

a determination unit for determining the crimp state of the crimp contact terminal based on the cross-sectional shape estimated by the estimation unit in the spacing found by the crimp height calculation unit.

5. The quality determination apparatus according to claim

4, wherein in the cross-sectional shape estimated by the estimation unit in the spacing found by the crimp height calculation unit,

if the total length is equal to or greater than a length applied when the pair of crimp pieces comes in contact with each other and is less than a length applied when the pair of crimp pieces comes in contact with the bottom wall, the determination unit determines that the crimp state of the crimp contact terminal is good; and

if the total length is less than the length applied when the pair of crimp pieces comes in contact with each other or is equal to or greater than the length applied when the pair of crimp pieces comes in contact with the bottom wall, the determination unit determines that the crimp state of the crimp contact terminal is bad.

6. The quality determination apparatus according to claim 4, wherein

the calculation unit calculates a total cross-sectional area of the core wire, the bottom wall, and the pair of crimp pieces in the orthogonal direction to the core wire after crimp;

calculates a cross-sectional area of the crimp contact terminal after crimp;

calculates a cross-sectional area of the core wire after crimp based on the total cross-sectional area and the

cross-sectional area of the crimp contact terminal; and

calculates the calculated compression ratio of the core wire based on the cross-sectional area of the core wire and a cross-sectional area of the core wire before crimp input to the information input section.